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Major issues in transport: promoting sustainable and inclusive transportation systems

Promoting sustainable and inclusive transportation systems

Note by the secretariat

Summary

Development of sustainable and inclusive transportation systems is a priority on the global and regional development agendas. The Open Working Group on Sustainable Development Goals has proposed including goals and targets related to safe, affordable, accessible and sustainable transportation systems for all as part of sustainable development goals. Countries and cities in the Asia-Pacific region are facing challenges in providing sustainable and inclusive transport infrastructure and services to meet the mobility needs of citizens and improve freight movement efficiency. They need to develop and implement transport policies to address those challenges.

The present document contains recommendations on various policies that can enhance the sustainability and inclusiveness of transportation systems. These policies include: (a) enhancing efficiency of transport operations; (b) promoting regional standards and guidelines for infrastructure, fuel quality, vehicle fuel economy and road safety; (c) ensuring inclusive and integrated transport planning encompassing national, intercity, urban and rural transport; and (d) strengthening institutional coordination and the capacities of national, local and city agencies.

The Committee may wish to provide the secretariat with guidance on activities to address the issues and challenges of promoting sustainable and inclusive transportation systems.

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I. Introduction

1. In 2012, the United Nations Conference on Sustainable Development (Rio+20) concluded with renewed global commitment to sustainable development. Various sectoral policies and strategies are being developed and refined in reflection of that commitment, and global and regional development agendas are giving priority to the development of sustainable and inclusive transportation systems. As mandated by the Rio+20 outcome document "The future we want", the Open Working Group on Sustainable Development Goals has articulated 17 goals and 169 targets on sustainable development. [1] The proposed goals and targets are an input to the development agenda beyond 2015 and define priority areas.

2. With respect to the transport sector, the Open Working Group proposed the following target: "by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons".[2] Some of the other targets in its current form are as follows: (a) develop good-quality, reliable, sustainable and resilient infrastructure; (b) provide secure and equal access to [. . .] markets; (c) increase investment [. . .] in rural infrastructure; and (d) integrate climate change measures into national policies, strategies and planning.[3]

3. Member States need to set policies and implement projects to achieve goals and targets related to sustainable transportation and reorient the transport development agenda to make it more sustainable and inclusive.

4. The essential attributes of a sustainable and inclusive transportation systems are an optimum balance of economic, social and environmental factors along with long-term serviceability, safety, reliability, affordability and equitable access. The issue of accessibility becomes more important in the context of inclusiveness as the majority of the population that live below the poverty line reside in rural areas and informal urban settlements. Transportation systems may be inaccessible to them both physically and financially.

5. Further, while considering sustainable transport development, the distinct characteristics of passenger and freight transport require distinct policies and approaches. The different levels of the "hierarchy" of transportation systems, namely regional, national, intercity, urban and rural transportation systems, also require a different focus and policy approach. Thus a range of strategies and policies are needed to improve passenger and freight transport hierarchies. Countries could consider including elements of integrated intermodal transport planning, building and strengthening institutions, improving efficiency of transportation systems and operations, improving public and non-motorized transport and road safety while developing and refining sustainable and inclusive transport policies and strategies.

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[1] The thirteenth session of the Open Working Group was held from 14 to 18 July 2014 in New York. The outcome document was issued on 19 July 2014 and is available from http://sustainabledevelopment.un.org/focussdgs.html.

[2] Ibid., target 11.2.

[3] Ibid., targets 9.1, 2.3, 2.a and 13.2.

6. The present document contains a review of various policies that can enhance the sustainability and inclusiveness of transportation systems. It is focused on key directions in transport development in the region, and policy proposals are put forward for the consideration of member States.

II. Enhancing the sustainability and inclusiveness of transportation systems

7. Member States are implementing various national, subregional and regional initiatives to improve transport connectivity in the region. Growth in trade and movement of people is creating an increase in transport demand. While the provision of transportation systems and services is keeping pace with the growing demand, the need to improve the overall sustainability and inclusiveness of transportation systems adds a further challenge.

8. The following section outlines some of the issues and challenges countries in Asia and the Pacific are facing in the development of sustainable and inclusive transportation systems.

A. Enhancing efficiency of transport operations

9. Regional transport connectivity promotes the movement of goods and people within a country and across countries. There have been concerted efforts by member countries to improve regional transport infrastructure such as highways, railways and intermodal transfer points. While there are wide variations across countries in the quality of transport infrastructure, the region is already relatively well connected in terms of its transport infrastructure networks.

10. Regional intermodal transport networks will play a particularly important role for trade from landlocked developing countries and small island developing States, supporting these countries in participating more actively in international and regional trade. By investing in intermodal facilities, such as dry ports, as well as in better physical linkages between different modes, Governments can increase transport options for shippers and traders that will allow more cost-effective and competitive transport solutions. The network will allow a shift to energy-efficient and cost-effective modes, such as railways for long-haul freight. This is particularly important for landlocked countries in the Asia-Pacific region as the transport cost in Asian landlocked developing countries is 1.28-1.91 times higher than that of representative coastal countries.

11. Although various efforts have been put into place to improve regional transport infrastructure following the design standards, guidelines and guiding principles outlined in the three intergovernmental agreements developed under the auspices of the Commission,[4] more policy efforts to further upgrade the region's transport infrastructure networks as well as promote the full utilization of such regional intermodal networks are required to enhance competitiveness and lower the transport costs of countries in the region, particularly landlocked countries.

12. While the condition of physical infrastructure has been greatly improved and connectivity is very high, people and goods must undergo either trans-shipment or lengthy and complicated formalities to cross borders.

[4] The Intergovernmental Agreement on the Asian Highway Network; the Intergovernmental Agreement on the Trans-Asian Railway Network; and the Intergovernmental Agreement on Dry Ports.

There is much to be done to facilitate cross-border movement of goods and people.

13. Non-physical barriers at borders increase transport costs, reduce competitiveness of land transport and trade by delaying movements of goods and people. Many studies point out the need for and benefits of simplifying and harmonizing the international transport process. The situation is further complicated by the need to enhance security and, in some cases, to protect the domestic transport industry. Greater use of ICT applications for transport facilitation, both behind and at borders, may help to enhance cross-border traffic management and improve the efficiency of the movement of people and goods.

B. Regional standards to overcome adverse impacts

14. Expansion of transport infrastructure networks brings economic development and social opportunities. However, its expansion is accompanied by rapid motorization and an increase in less-desirable economic, social and environmental externalities, including pollution and depletion of natural resources, as well as increases in traffic crashes and fatalities.

1. Emissions and fuel standards

15. The continuous rise in energy prices increases the cost of transport, which may reduce access. In many cases where transport infrastructure and services are physically available, accessibility may nevertheless be prohibited by cost. In both rural and urban areas, the poor spend a greater proportion of their income on transport.[5] Thus there is wide acceptance among transport policymakers that countries need to work to reduce the energy consumption and emissions of the transport sector. However, countries employ different policies and strategies depending on the characteristic of their transportation systems.

16. There are areas where countries could potentially tackle the issues of energy consumption and emissions. Countries may consider updating or upgrading vehicle emission and fuel economy standards.

17. Many countries in Asia have already adopted emission standards, including European standards.[6] Many countries are in the process of adopting or upgrading their vehicle emission standards. Recently Singapore announced that by 2017 it will adopt Euro 6 emission standards, becoming the first country in the region to adopt the most stringent regulation to reduce harmful emissions.

18. Improving fuel economy standards directly relates to vehicle-manufacturing countries.[7] The World Forum for Harmonization of Vehicle Regulations has incorporated into its regulatory framework the technological

[5] See E/ESCAP/MCT.2/9.

[6] European emission standards stipulate acceptable limits for exhaust emissions (such as nitrogen oxides, total hydrocarbon, non-methane hydrocarbons, carbon monoxide and particulate matter) of new vehicles. Euro standards 1-6 are applicable to light vehicles while standards I-VI are applicable to heavy-duty vehicles. The higher the standard reference number, the more stringent is the emission requirement.

[7] The major vehicle-manufacturing countries in Asia are China, India, Japan, the Republic of Korea, the Russian Federation and Thailand.

innovations of vehicles to make them safer and more environmentally sound.[8] The Global Fuel Economy Initiative has set a target of a 50 per cent reduction in new car fuel consumption (L/100 km) compared to 2005 levels by 2030.[9]

19. The secretariat plans to collaborate with the United Nations Economic Commission for Europe, the United Nations Environment Programme and other stakeholders in promoting and upgrading emission standards, fuel economy standards and quality of fuel. In consultation with member States and stakeholders, the secretariat may explore the possibility of establishing regional standards and guidelines in the above-mentioned areas.

2. Road safety and the harmonization of road signs and signals

20. In its resolution 64/255 of 2 March 2010 on improving global road safety, the General Assembly proclaimed the period 2011-2020 as the Decade of Action for Road Safety with a goal to stabilize and then reduce the forecasted level of road traffic fatalities around the world through activities conducted at the national, regional and global levels.

21. Despite various efforts at national, regional and global levels to improve road safety in line with the proclaimed Decade of Action, the number of road traffic deaths in many developing countries of the region has dramatically increased in recent years due to rapid growth in the number of vehicles and the length of the road network. The Global Status Report on Road Safety 2013[10] showed that more than 777,000 people were killed on Asia-Pacific roads in 2010, more than half of the 1.24 million road traffic deaths worldwide in that year and a considerable increase compared to 2007. The full impact of these losses is immeasurable, yet the economic losses were calculated to range from 1 to 5 per cent of gross national product.[11]

22. As regional transport connectivity improves, more traffic will be crossing national borders where different road signs, signals and road markings would pose potential risks to international drivers. Thus, there is the need for better harmonization of road signs and signals and road traffic rules in Asia-Pacific countries in line with the United Nations Convention on Road Signs and Signals (1968) and Convention on Road Traffic (1968).

23. ESCAP resolution 48/11 called for accession and implementation of seven United Nations transport conventions, including the Convention on Road Signs and Signals and Convention on Road Traffic; nevertheless, many ESCAP countries have yet to accede to these two conventions.[12] A review of the status of road signs, signals and road markings used in the region is needed to explore opportunities for collaboration and ways of promoting the United Nations legal instruments related to road safety. Initially the focus

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[8] The United Nations Economic Commission for Europe Transport Division provides secretariat services to the Forum (www.unece.org/trans/main/welcwp29.html).

[9] Global Fuel Economy Initiative, *Fuel Economy State of the World 2014: The World is Shifting into Gear on Fuel Economy* (London, 2014).

[10] World Health Organization, *Global Status Report on Road Safety 2013: Supporting a Decade of Action* (Geneva, 2013). Available from www.who.int/violence_injury_prevention/road_safety_status/en/index.html.

[11] Available from www.who.int/roadsafety/decade_of_action/toolkit/key_messages/en/index.html.

[12] As of 24 June 2014, ESCAP members that have not acceded to the two conventions are as follows: Afghanistan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Democratic People's Republic of Korea, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Myanmar, Nepal, Singapore and Sri Lanka.

could be on members of the Association of Southeast Asian Nations as the establishment of the ASEAN economic community in 2015 is expected to result in an increase in cross-border traffic.

24. The first pillar of the Global Plan for the Decade of Action for Road Safety is building road safety management capacity. The other four pillars are improving the safety of road infrastructure and broader transport networks; further developing the safety of vehicles; enhancing the behaviour of road users; and improving post-crash care. Countries should consider the Global Plan as a tool to support the development of national plans of action and are encouraged to implement road safety activities in a holistic manner.

25. In order to help ESCAP members and associate members in implementing activities under the Global Plan, the secretariat would extend collaboration with key stakeholders in the region to: (a) advocate for global and regional road safety best practices; (b) research and analyse road safety issues, data and statistics in member countries and disseminate the results and findings; (c) organize capacity-building activities and provide technical assistance; and (d) connect road safety experts and government officials in the region to share best practices on improving road safety.

C. Inclusive and integrated transport planning

26. In addition to addressing the issues and challenges of regional and cross-border transport, national level issues and challenges relating to urban, rural and freight transport are equally critical and require immediate attention.

27. Many Governments and cities of the region are taking various initiatives to enhance sustainability and inclusiveness of transportation systems. However, there is much work to be done with regard to inclusive and integrated transport planning; harmonization of national and local transport policies, institutional strengthening and enhancing coordination between national and city governments to implement sustainable and inclusive transport policies. In many cases, transport integration is limited to literature and government reports because of the structure of government and lack of coordination in planning different transport modes.

1. Urban public transport

28. Governments in the region face many challenges in providing efficient transport in cities due to rapid urbanization. A growing fleet of private vehicles is causing road congestion and a rise in emissions, pollution and health issues. However, a recent review of national urban policies in selected member countries has revealed that some progress has been achieved in the formulation of sustainable national and urban transport policies.

29. The introduction of public transportation systems such as high-capacity public buses, mass rapid transit and bus rapid transit can help to reduce the volume of private cars. Various pull and push policies can discourage the use of private vehicles and encourage the use of public transport. The Republic of Korea, Singapore and Hong Kong, China have developed well-functioning integrated public transportation systems that are based on attractive public transport systems and restricted use of private vehicles.

30. Infrastructure and facilities for non-motorized transport, such as walking and cycling, play an important role in providing sustainable mobility. Well-planned and conceived non-motorized transport infrastructure as part of

overall integrated public transport can attract more people and help reduce congestion and emissions.

31. Many cities have initiated policies and developed projects to encourage non-motorized transport. For example, since 1996, more than 300 km of separated bicycle paths, known as CicloRuta, have been constructed in Bogota. The network of bicycle paths is among the most extensive in the world. In 2011, it was estimated that there were some 320,000 bicycle trips per day.[13] The city sponsors frequent car-free events, where the streets are closed to private motor vehicles.

32. Some cities have implemented visionary and successful interventions. In Hangzhou, China, a public bicycle programme was launched in 2008 with the intention of feeding into the public transit network by covering the first and last part of a trip. Docking stations for public bicycles were placed near transit stations. Since the programme began, the use of public bicycles has increased from an average of less than 1 use per bicycle per day to 5.5 uses per bicycle per day. In 2013, the average number of trips per day was 325,000 with the highest number of trips reaching 402,400.[14] The share of bicycles as a mode of transportation has increased from 34 per cent in 2008 to 43 per cent in 2011.[15]

33. Despite progress in various areas, there is still much more to be done to achieve coherent linkages of policies and programmes at national and local levels. In many cases, implementation of these policies and strategies is also lacking.

34. Strong institutions are required to implement integrated transport policies and strategies. More leaders with better qualifications and training are required to guide these institutions. In this context, universities and teaching institutions also need to reorient their training approaches and methods and include elements of sustainability and inclusiveness in their curriculum.

35. In addition, a large proportion of the urban population is living in slums. The share of urban residents living in slums is 28 per cent for East Asia, 31 per cent for South-East Asia and 35 per cent for South Asia.[16] The issue of accessibility and inclusiveness is particularly important for these groups of people and for the population living below the poverty line in rural areas. Different policies are required to enable poor people to access transport systems.

2. Rural transport

36. Access is important in both urban and rural areas. By providing better access, farmers are able to get their crops to the market and people find it easier to reach jobs, schools and hospitals. Access has been identified as a

[13] www.c40.org/case_studies/bogot%C3%A1%E2%80%99s-cicloruta-is-one-of-the-most-comprehensive-cycling-systems-in-the-world.

[14] Susan A. Shaheen and others, "China's Hangzhou public bicycle: understanding early adoption and behavioral response to bikesharing", Transportation Research Record 2247. Available from http://76.12.4.249/artman2/uploads/1/China___s_Hangzhou_Public_Bicycle.pdf.

[15] "Hangzhou, China: the world's largest bike sharing program", EcoMobility (ICLEI – Local Governments for Sustainability, 2011). Available from www.ecomobility.org/fileadmin/template/project_templates/ecomobility/files/Publications/Case_stories_EcoMobility_Hangzhau_PDF_print.pdf.

[16] United Nations Human Settlements Programme, *State of the World's Cities 2012/2013: Prosperity of Cities* (Nairobi, 2012), p. 127.

key enabling condition for sustainable prosperity. Often, infrastructure has been put in place but not transport service, and in some cases available services do not satisfy the needs of all segments of society particularly disadvantaged groups such as the poor, women or people with disabilities.

37. Governments have an obligation to provide rural communities with access to transport, and should examine and implement assessment systems that look at the broader social benefits of rural access provision as well as the known economic benefits.

3. Freight transport

38. Intermodal transport involves the use of various transport modes and services. It can offer greater environmental sustainability than using a single mode, such as roads, for the whole transport process. Therefore intermodal transport is gaining prominence as a way to improve the efficiency of freight transport. The governance and management of intermodal transport, however, is a complex issue involving various stakeholders that provide infrastructure and services (inland water, road, rail and intermodal logistics centres) to the whole supply chain. The level of coordination at the national level may reflect how the ministries are structured in a country. Various sectoral transport institutions are being blended into one responsible for all transport modes. The form of ownership (public, public-private and private) and financing of intermodal infrastructure has a significant impact on efficiency and transport costs. The provision of much-discussed one-stop transport services is still evolving, and it requires fare integration and distribution, route selection, and handling, storage, trans-shipment and clearance at international borders.

39. With the objective of improving the connectivity and efficiency of freight transport, modernization and revamping of railways in India is placed high in the infrastructure agenda. The new Indian Government has proposed a project to build a high-speed rail network and a network of freight corridors over the next few years. Due to very high costs of these projects, the Government is discussing the possibility of relaxing foreign investment norms in the railways sector, such as allowing 100 per cent foreign direct investment in high-speed train systems and dedicated freight lines.

40. As the situation in every country is unique, reviewing existing coordination and governance mechanisms, identifying issues and challenges, evaluating various factors and policies is necessary to consider ways to enhance the operational efficiency of intermodal transportation systems. When developing strategies in the Asia-Pacific region, it would be useful to foster the participation of all key stakeholders from the private and public sectors so that the process will benefit from their perceptions on identified issues, factors and policies related to governance, management and the operation of intermodal transport.

III. Policies to consider for the region

41. New strategies, policy initiatives and actions are required at regional, national and local city levels to improve the sustainability and inclusiveness of transportation systems and services. In this context the secretariat will continue to promote sustainable and inclusive transport policies by placing more focus on research and innovation, institution building and strengthening, promotion of regional standards and guidelines, and dissemination of knowledge. The following policy proposals are offered that can help to move towards more sustainable and inclusive transportation systems in the region.

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42. **Enhancing efficiency of transport operations**: In addition to improving regional physical transport connectivity, countries need to work to improve operational efficiency of transport in the region. Policies can enhance efficiency of transport operations by encouraging the use of energy-efficient vehicles, shifting to energy-efficient modes of transport and promoting the use of railways for long-haul freight and the use of intermodal transfer points.

43. **Promoting regional standards and guidelines**: Countries could consider collaborating to develop and adopt vehicle emission and fuel economy standards and accede to and implement road safety conventions that will lead to harmonization of road signs in the region and contribute to improving road safety.

44. **Ensuring inclusive and integrated transport planning**: Countries in the region need to move from unimodal to integrated transport planning at the national and city levels. The integration of transport planning should incorporate the physical interface between modes as well as services, including common fare and ticketing system. Planning should aim for inclusive development that takes urban and rural populations into consideration.

45. **Strengthening institutional capacities**: Strong institutions are a prerequisite to implement sustainable and inclusive transport policies and integrated transport planning, and to enhance coordination among various agencies. Countries and cities should consider ways to enhance the capacity of officials and institutions. More emphasis could be given to research on transport governance, development and operation. Advocacy and capacity-building activities targeting key stakeholders can be planned in collaboration with development partners, related United Nations agencies and other international organizations.

IV. Issues for consideration

46. The Committee may wish to encourage member States to consider ways to enhance the sustainability of national, intercity, urban and rural transportation systems and to consider the policy options outlined in the present document.

47. The Committee may wish to invite member States to share innovative national and local policies being developed and implemented for development of sustainable and inclusive transportation systems.

48. The Committee may wish to provide the secretariat with guidance on activities to address issues and challenges for promoting sustainable and inclusive transport policies and systems in the region.